REMARKS/ARGUMENTS

Claims 26-50 are active in this application. Support for the claims is found in Claims 1-25 and the specification as originally filed. Claims 26-30, 32-39, 41, and 48-50 are drawn to the elected subject matter. With respect to process claims 31, 40, and 42-47, Applicants request that these claims be rejoined to the elected claims upon allowance.

The rejection of Claim 1 under 35 U.S.C. § 102(b) over Chang et al is obviated by the cancellation of Claim 1. As this rejection may apply to the pending claims, it is noted that Chang et al does not describe an isolated polynucleotide which encodes SEQ ID NO:2 (Claim 26), comprising SEQ ID NO:1 or its complement (Claims 32 and 33), which is 90% identical to SEQ ID NO:1 or hybridizes under stringent conditions to the complement of SEQ ID NO:1 and encodes a protein with ccpA1 catabolite control activity (Claims 34 and 36) or at least 15 consecutive nucleotides of SEQ ID NO:1 (Claim 35). With respect to Claim 35, it is noted in the alignment provided by the Office (a portion of which is reproduced below) there is only 11 nucleotides that overlap between SEQ ID NO:1 and the sequence of Chang et al.

```
GAG GCA GGA GTG TCC ACC ATC TTG TCA AAT
ii  ii  ii  iii iii iii ii  iii ii  ii
gaa gct ggg gtg tcc acc att ttg tcc aac tct gaa gaa aac cca gag 620 (ID #1)
Glu Ala Gly Val Ser Thr Ile Leu Ser Asn Ser Glu Glu Asn Pro Glu
            120                 125                 130
```

Accordingly, withdrawal of the rejection over Chang et al is requested.

The rejection of Claim 6 under 35 U.S.C. § 102(b) over Sanchez et al is obviated by the cancellation of this claim. Sanchez et al describes an nucleotide sequence that is at best 57% similar to SEQ ID NO:1. Sanchez et al, however, does not describe a sequence which hybridizes to the complement of SEQ ID NO:1 AND encodes a protein with ccpA1 catabolite control activity. Accordingly, withdrawal of this ground of rejection is requested.

The rejection of Claims 1, 3, 4 and 6 under 35 U.S.C. § 112, first paragraph ("written description") is obviated by the cancellation of those claims. As this rejection may apply to the pending claims, the rejection is untenable for the following reasons.

Claim 34 and Claim 36 define the polynucleotide by hybridization under particular stringent conditions or which is at least 90% identical to SEQ ID NO:1, respectively. Both of these claims also require that the polynucleotide encode a protein with ccpA1 catabolite control activity.

When one looks at an amino acid sequence and reverse translates the amino acid sequence to a polynucleotide sequence, variation of the polynucleotide sequence results due to the well-known biological phenomenon of genetic degeneration. Such variation can result in two polynucleotide sequences that are at least 90% identical. For illustration, Applicants have taken a 10 amino acid sequence and reverse translated the sequence into two degenerate nucleotide sequence, and compared those two sequences:

```
                 MetThrThrThrValAlaSerValLeuSer
Degenerate 1    :ATGACTACTACTGTTGCTTCTGTTCTTTCT : 30
Degenerate 2    :ATGACCACAACCGTTGCATCAGTACTATCC : 30
                 ATGAC AC AC GTTGC TC GT CT TC
```

The consensus of the alignment is shown below, and the resultant percent identity is about 71%. Based on this alone, it is clear that the specification describes the representative genus of polynucleotides that encode proteins with at least 90% identity to SEQ ID NO:1 and those polynucleotides that hybridize to the complement of SEQ ID NO:1 as defined in the claims.

Applicants also direct the Examiner's attention to Example 9 of the Synopsis of Application of Written Description Guidelines which analyzes a situation where a claim covers a genus of nucleotide sequences that hybridize under stringent conditions to a

disclosed sequence having a particular activity. In these guidelines, the Patent Office has concluded that such a claim is adequately described within the meaning of 35 U.S.C. § 112, first paragraph. In particular, note the Patent Office's rationale:

> The claim is drawn to a genus of nucleic acids all of which must hybridize with SEQ ID NO:1 and must encode a protein with a specific activity.
>
> The search of the prior art indicates that SEQ ID NO:1 is novel and unobvious.
>
> There is a single species disclosed (a molecular consisting of SEQ ID NO:1) that is within the scope of the claimed genus.
>
> There is actual reduction to practice of the disclosed species.
>
> Now turning to the genus analysis, a person of skill in the art would not expect substantial variation among species encompassed within the scope of the claims because the highly stringent hydridization conditions set forth in the claim yield structurally similar DNAs. Thus, a representative number of species is disclosed, since highly stringent hydridization conditions in combination with the coding function of DNA and the level of skill and knowledge in the art are adequate to determine that applicant was in possession of the claimed invention.
>
> **Conclusion**: The claimed invention is adequately described.

Therefore, the present claims are described and as such withdrawal of this ground of rejection is requested.

The rejection of Claims 1-4 under 35 U.S.C. § 112, first paragraph ("enablement") is obviated by the cancellation of these claims. As this rejection may apply to the pending claims, the rejection is untenable for the following reasons.

As noted above, the specification describes the polynucleotides claimed. Furthermore, the discussion of stringent conditions is found on page 7 of this application, the application describes the protein encoded by the polynucleotides as a ccpA1 protein or

catabolite control protein (page 5, lines 12-13), and its involvement in the production of L-amino acids (see, for example, Table 1 on page 19). The activity of ccpA proteins in carbon metabolism in bacteria is known (see, for example, the attached Abstract of the publication in FEMS Microbiol Lett. 1996 Jan 1;135(1):9-15). Accordingly, it would not require undue experimentation to make and use the polynucleotides as claimed in this application. Withdrawal of this ground of rejection is requested.

The rejection of Claims 10 and 11 under 35 U.S.C. § 112, first paragraph is obviated by the cancellation of these claims. As this rejection may apply to Claim 41, the rejection is traversed for the following reasons.

As stated on page 13, lines 12-15, the DSM 13673 strain was deposited on August 22, 2000 at the DSMZ in Braunschweig, Germany under the terms of the Budapest Treaty. In accordance with the terms of such a deposit, Applicants confirm that all restrictions on the public availability of this strain will be irrevocably and without restriction or condition removed upon the issuance of a patent on this application. Accordingly, withdrawal of this ground of rejection is requested.

The rejection of Claims 1-4 and 6 under 35 U.S.C. § 112, second paragraph is obviated by the cancellation of the claims.

Applicants request an indication that all pending claims are allowable. Early notice of such is also requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

Jean-Paul Lavalleye
Attorney of Record
Registration No. 31,451

Daniel J. Pereira, Ph.D.
Registration No. 45,518

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220